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Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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Introduction

This document represents the final version of the National Research Mobility web Portal. It is available on <http://www.eracareers-bg.net>. The services which it offers are:

- management of ontology based practical information – developed own tool:
 - business layer – on PHP,
 - presentation layer – XML + XSL = XSLT, html, MySQL
- publishing of job vacancies - RJOE

The National RMP supports on a national level via Internet the provision of information and services to mobile researchers.

According to the Pilot version of the National RMP the Portal Architecture Specification the National RMP for Bulgarian researchers is built. As the Portal is considered to mirror the European Researcher's Mobility Portal (RMP), the considerations of its designers (Figure 1), namely the specifications constituted by Reggiani (a project deliverable ruled by EC Framework Contract No RTD-JRC / 00-04), are taken into account.

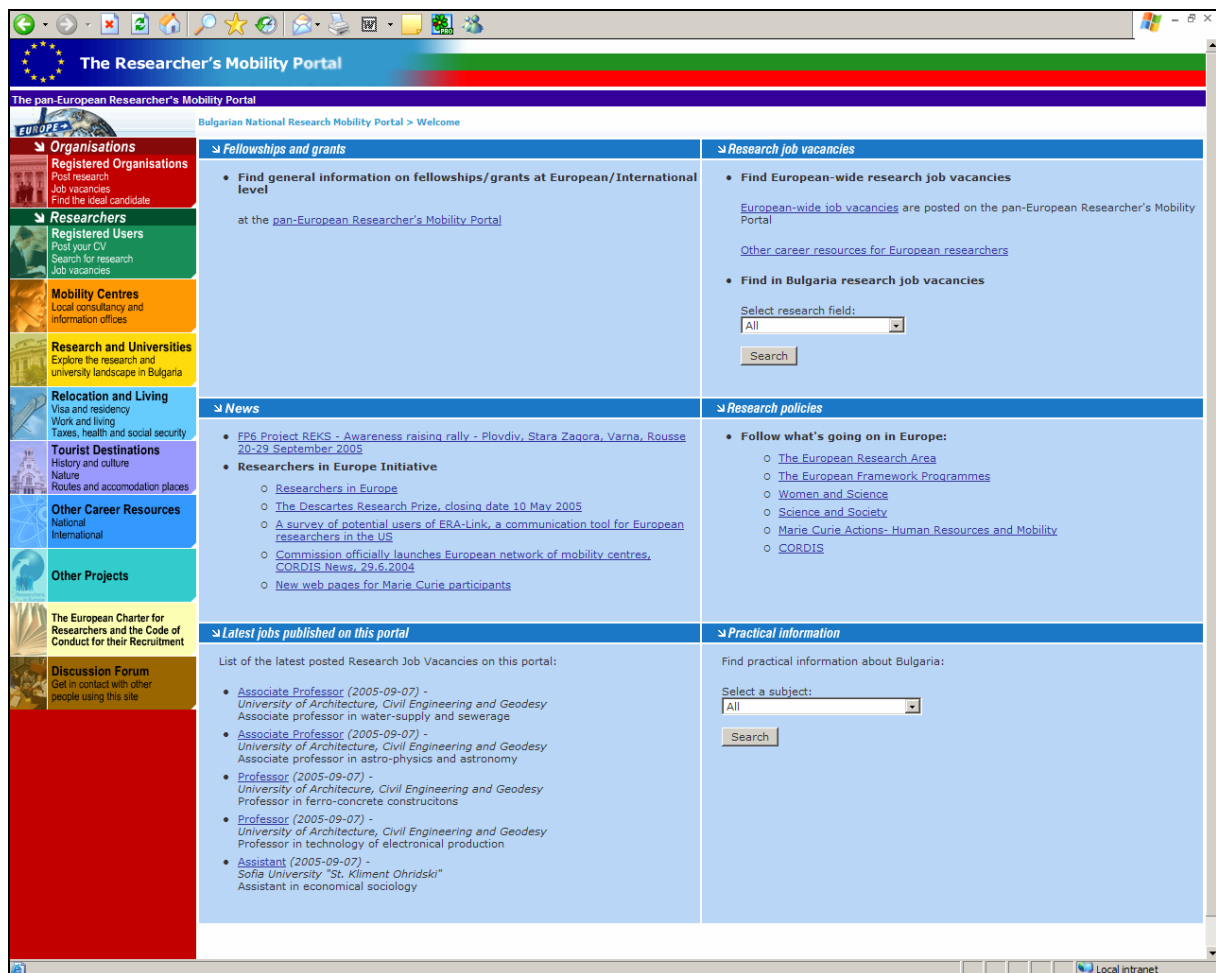


Figure 1. Bulgarian National RMP

In the previous deliverable 2.2 a Pilot version of Bulgarian National RMP was established and it was a basis for the final one. The development of the final version consists mainly of filling in of information and translating into Bulgarian (figure 2).

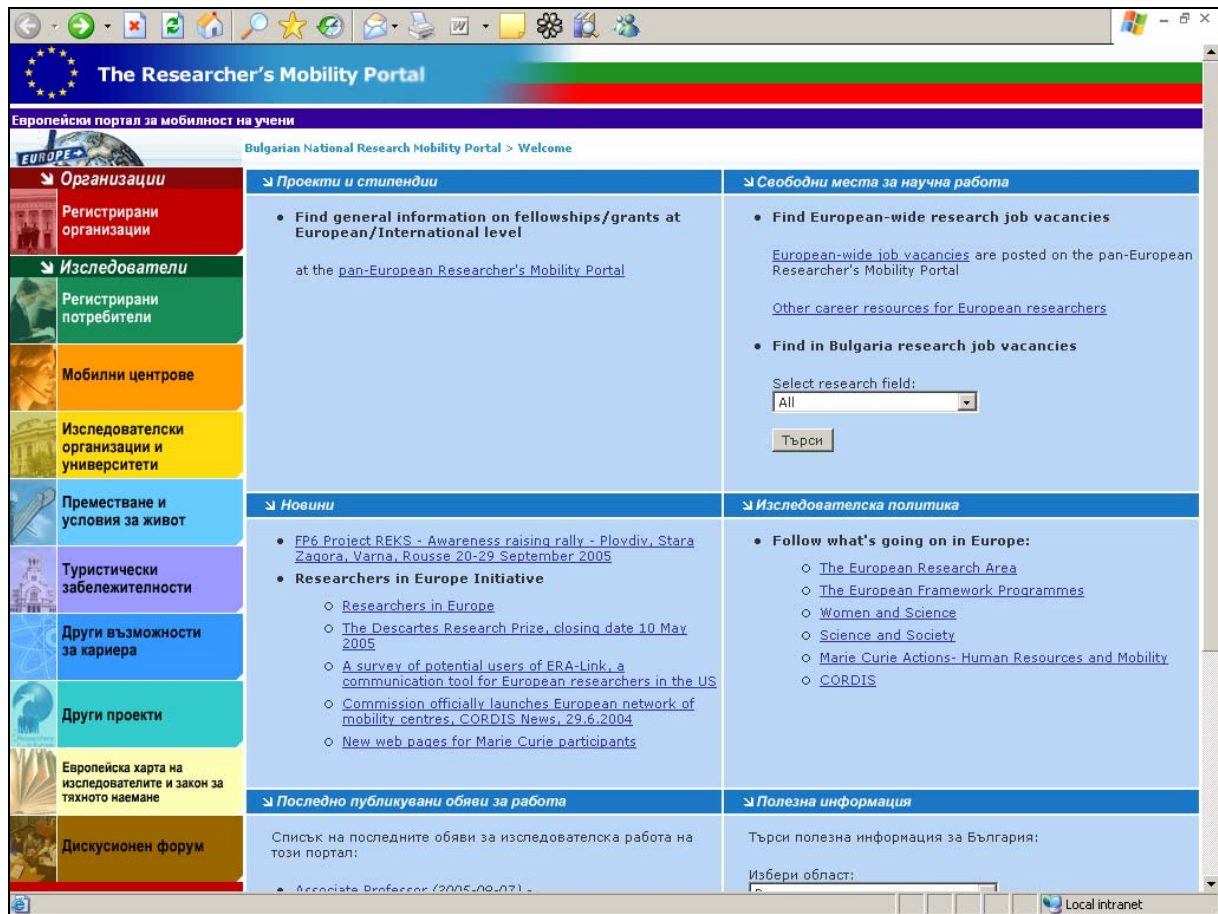


Figure 2. Bulgarian National RMP – Bulgarian version

This document will shortly repeat the previous deliverable 2.2 in the parts DataBase architecture, Administrative part, Navigation part and enrich them with new elements.

Job vacancies are published regularly on the European Mobility Portal using RJOE.

DataBase architecture

It is used central store Data Storage as it was mentioned in the first deliverable.

Data description is for research fields. There are two ontologies used for storing data information in our web site:

- for storing job vacancies, based on the Orthelius classification
- for practical information data.

The tree structure of data in the relational DB model is based on the NestedSets (Ceiko) algorithm for combined materialised path. It is used because it is more flexible for data tracking.

Portal Security Architecture

Currently, the National Research Mobility web-Portal is running on Apache and PHP working on LINUX OS. On the figure 3 is shown the Security Architecture of our National RMP.

On the first level there are Original Back End DBServer and RJOE DB – they are **master** – the data are collected there. The **Original DB Server collect Job Vacanceis** – it is one master server. The replication to the Front End DB is under **SSH protocol – Tunning Replication**. Then **Slave DBS generates XML via PHP to XSL** presentation from business logics. And finally request to **APACHE with HTML to the End User** – there are request and response from the user.

This security architecture denies access to Master DB from the end user. **This architecture allows export at any XML scheme.**

Application Server

As it was mentioned in deliverable 2.2, for the National RMP is used PHP as a programming language at the application layer. It is conditioned by using the Reggianis' RJOE tool functionality which is written in PHP on behalf of need to make a quick start-up of the National RMP and start gathering practical information and job offers from the Bulgarian regional research mobility centers (RMC).

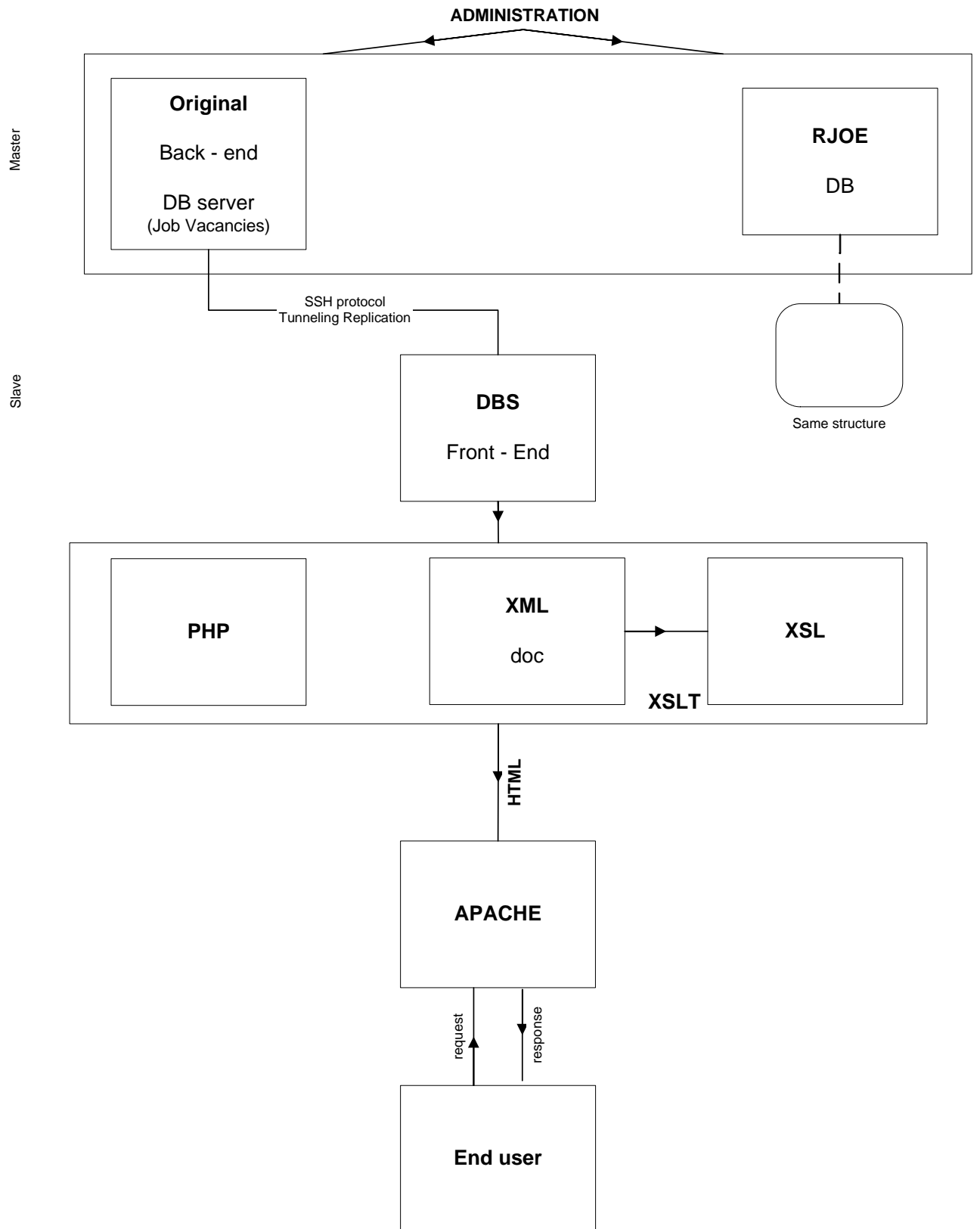


Figure 3. DB structure

DB tables

The core of the DB (figure 4) consists of four tables or two pairs of tables Categories - Categories Index and Links - Links Index. It is flexible and each link can relate to more than one category (1 link more than one node) and it avoids reiterations. The process for creating of relative categories is optimised.

Additionally, in the DB architecture is included Log Tracks (only for unique clicks).

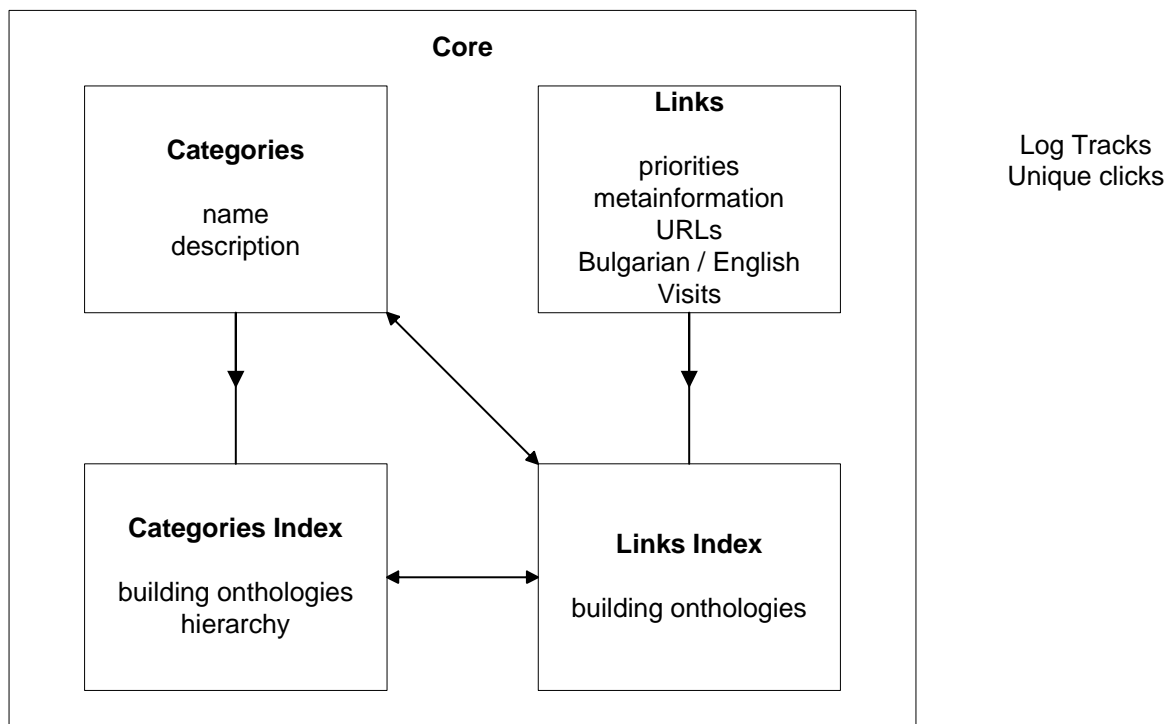


Figure 4. DB structure

Administrative part

The administration of the Original DB Server is web-based. The main categories relate to the navigation of the Bulgarian National RMP, i.e.:

- Job Vacancies,
- Researchers,
- Research Mobility Centers,
- Research & Universities,
- Relocation & Living,
- Tourist Destinations,
- Other Career Recourses
- Projects.

As it is visible on figure 5 the categories are on English but some of official words and sentences are in Bulgarian – easier for filling.

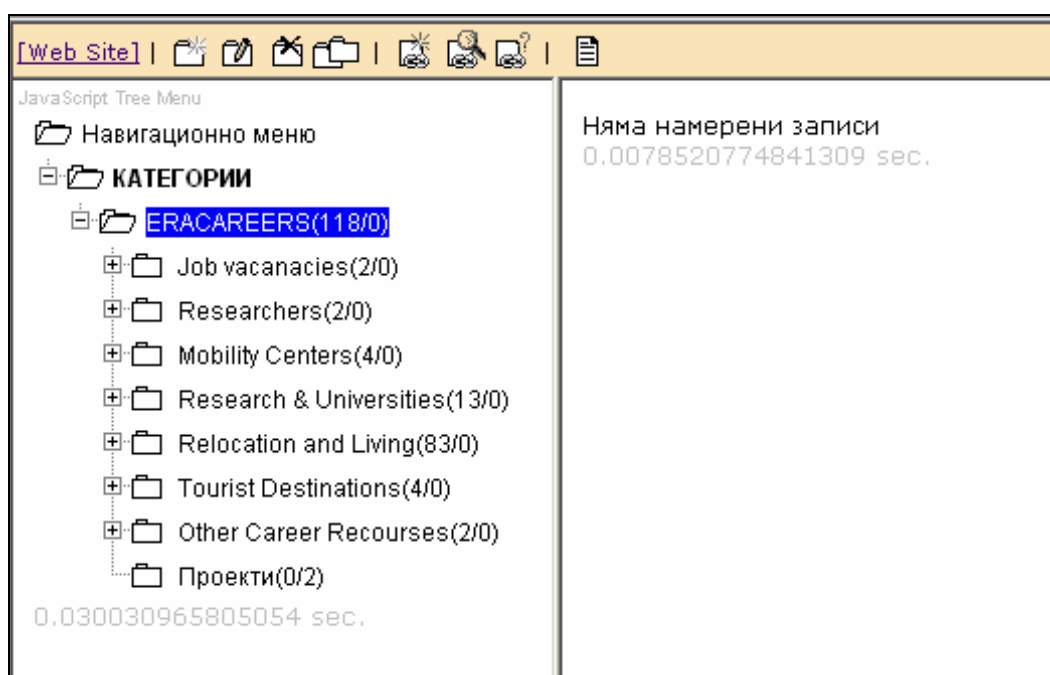


Figure 5. Main Structure

The DB Server supports as well English as Bulgarian data. During the filling in the data there are two possibilities – to add data description in English and in Bulgarian. On figure 6 the first part is in Bulgarian – Title, URL, Descriptions, Keywords and the second part – the same in English. The presentation of data on the web portal allows easy to separate the web-pages into two languages (figure 6).

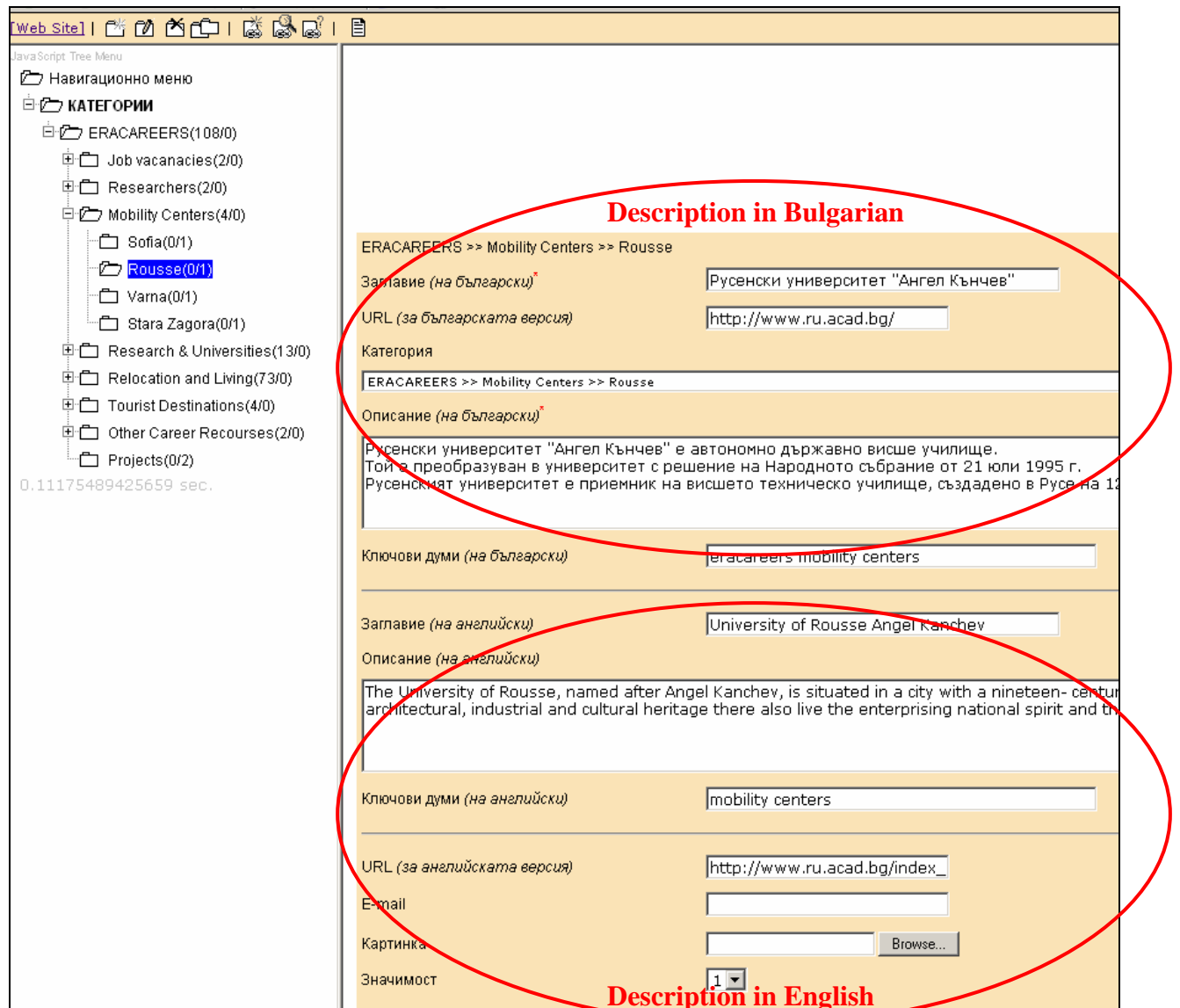


Figure 6. Bulgarian & English description

The features of the web-based administration provide opportunities to easy add, edit and delete categories as well as records (see figure 7).

Add, Edit, Delete Categories



Figure 7. Relocation and Living

Navigation part

In the project BuIRMCNet is considered the National Research Mobility Portal to mirror the European Researcher's Mobility Portal.

The final version of the National RMP is published on <http://www.eracareers-bg.net/> where was published also the pilot version. There are no changes and the simplest solution relies obviously on an accurate selection of the web site requirements:

- available in English, as static pages;
- without any access restriction;
- without frames;
- clearly with a suitable set of meta-data;
- each being page-specific when applicable.

The RMP Structure is given on Figure 8. It includes the following categories:

- Organisations
- Reseachers
- Mobility Centers
- Research & Universities
- Relocation & Living in Bulgaria
- Tourist Destinations
- Other Career Resources
- Projects
- European Charter
- Discussion Forum

The content of the categories was described in deliverable 2.2 for the pilot version of the National RMP.

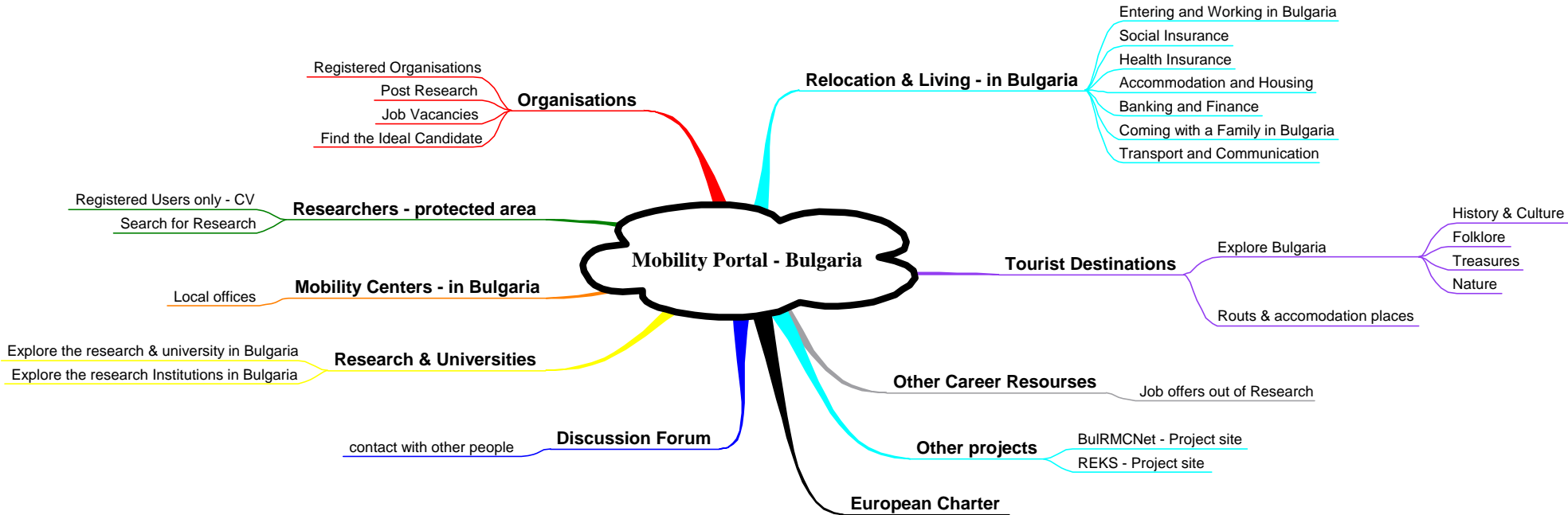


Figure 8 – National RMP Structure

Page Structure

Figure 9 is the graphical lay-out proposed for the portal implementation. It is based on the use of the template of the European RMP.

- The **European RMP header** is on the top of the page for both versions English and Bulgarian (Figure 9 - English and 10 - Bulgarian).
- First page is separated in six parts as on the European RMP:
 - Fellowships and grants
 - Research Job Vacancies
 - News
 - Research Policies
 - Latest jobs Published on this portal
 - Practical Information
- The **main menu on the left**

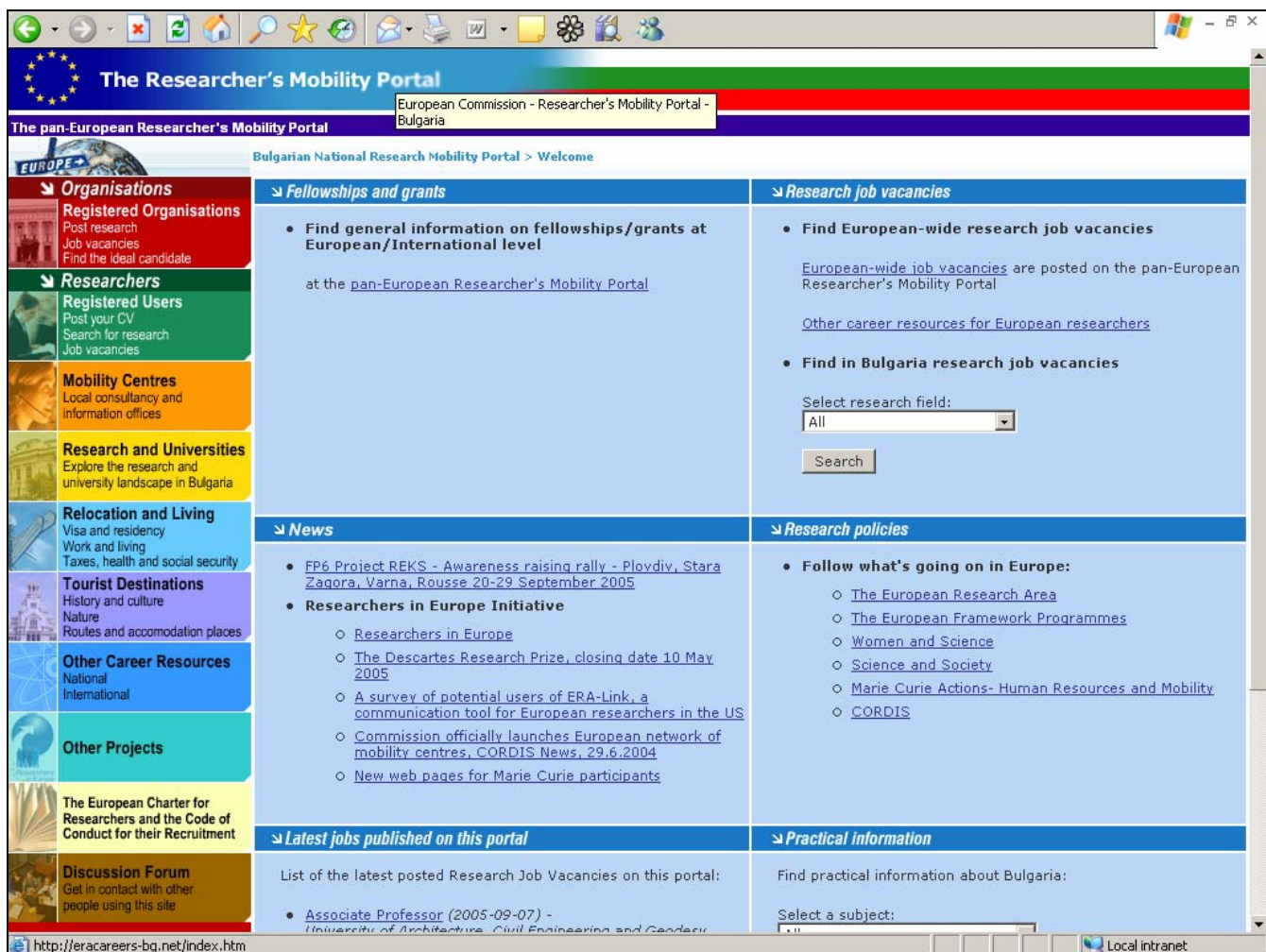


Figure 9 – Page Structure in English

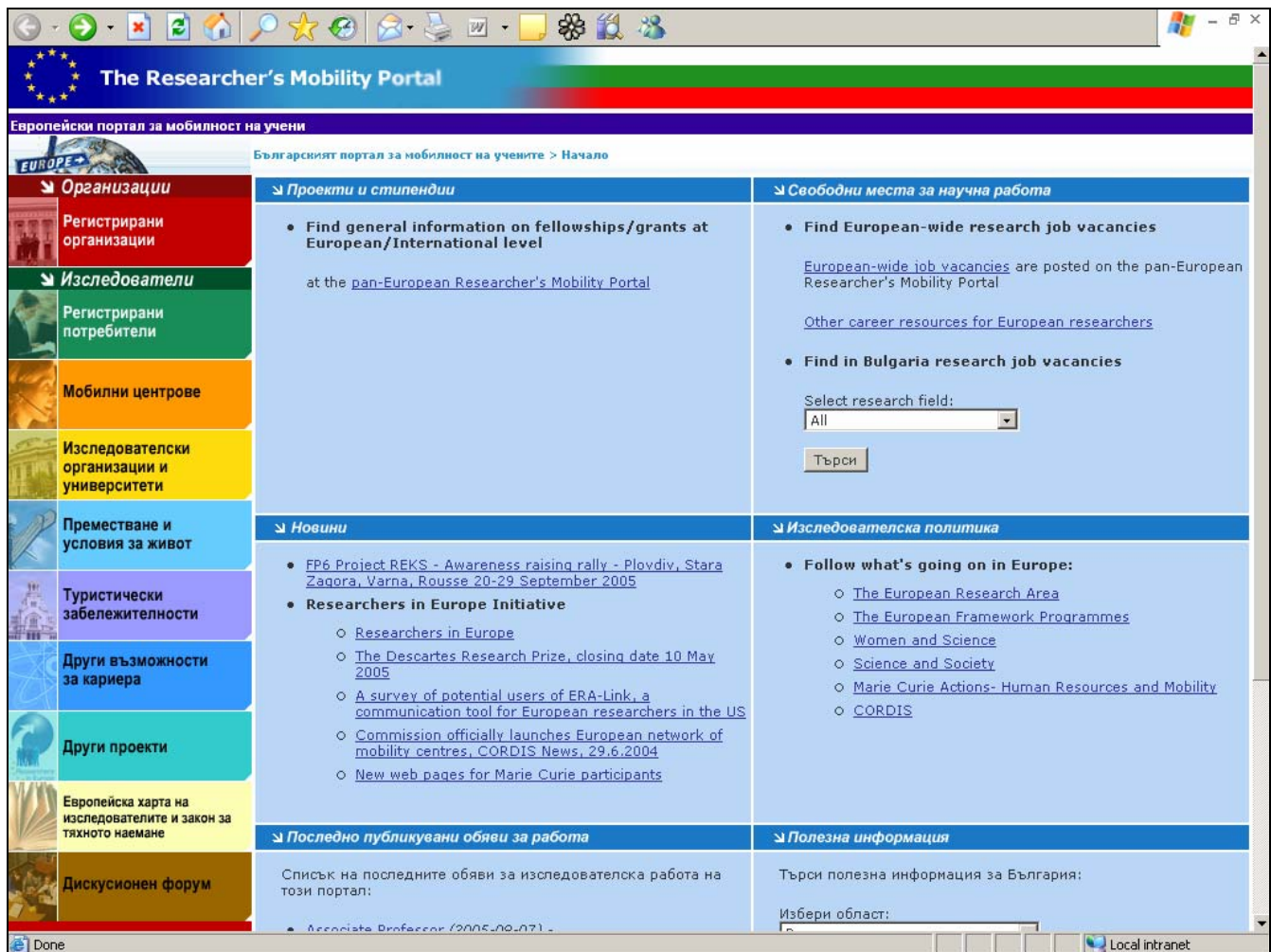


Figure 10 – Page Structure in Bulgarian

Main Menu

The main areas of the National RMP related to the main areas of European RMP are:

- Organisations,
- Researchers,
- Regional Mobility Centers,
- Research & Universities,
- Relocation & Living,
- Tourist Destinations,
- Other Career Resources,
- Projects,
- The European Charter,
- Discussion Forum.

Bulgarian Network of Research Mobility Centres

The National RMP provides Practical Information for Bulgaria. On the page for the Mobility centers there is an interactive map of Bulgaria (figure 11) for better orientation of the potential users.

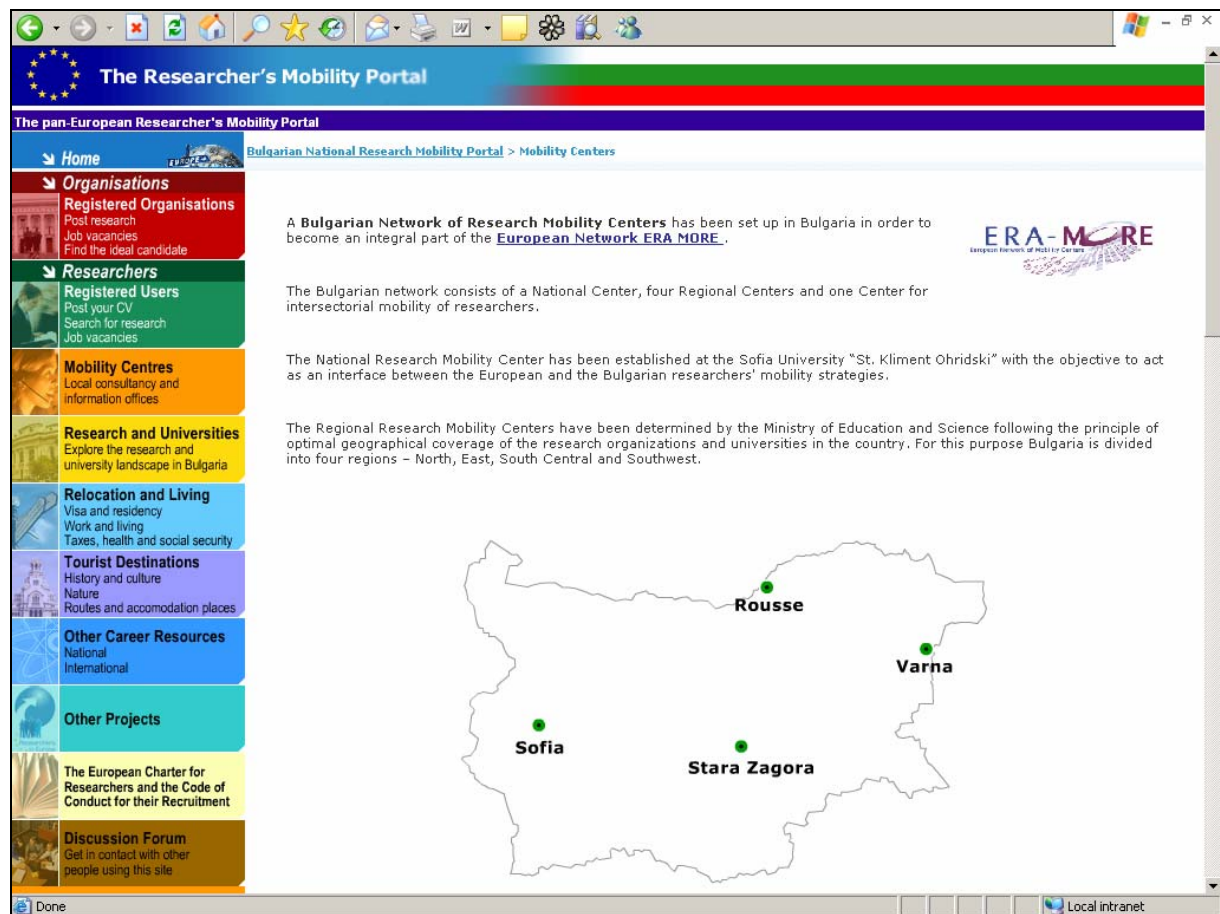


Figure 11 – Interactive map

The practical information about Bulgaria contains Relocation & Living, Research & Universities, and Tourist Destinations. The main topics of Relocation & Living are oriented to possibilities to Entering and Working in Bulgaria, Social Insurance, Health Insurance, Accommodation and Housing, Banking and Finance, Coming with a Family in Bulgaria, Transport & Communication. As it is visible on figure 9 each one of the topics has different records. On figure 10 there is National RMP presentation for Relocation & Living Topics (figure 12).

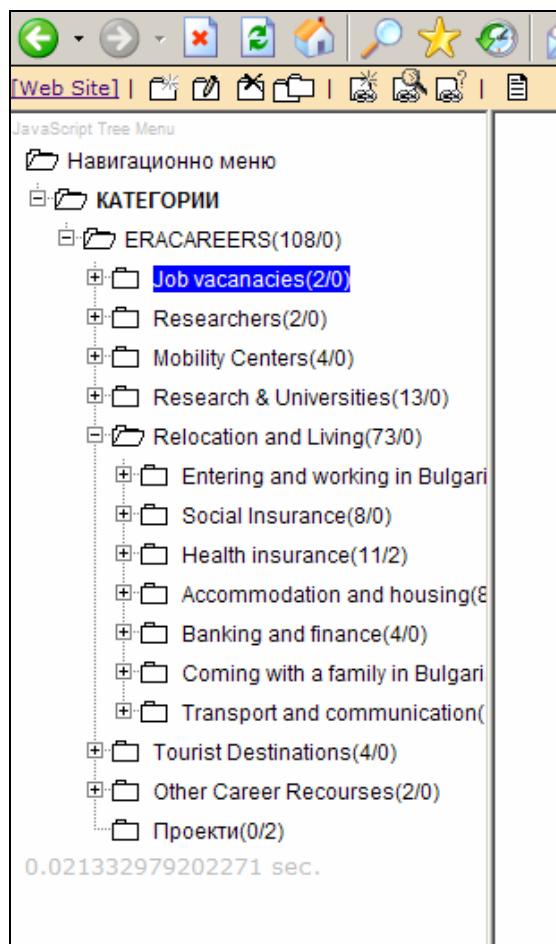


Figure 12 – Relocation & Living

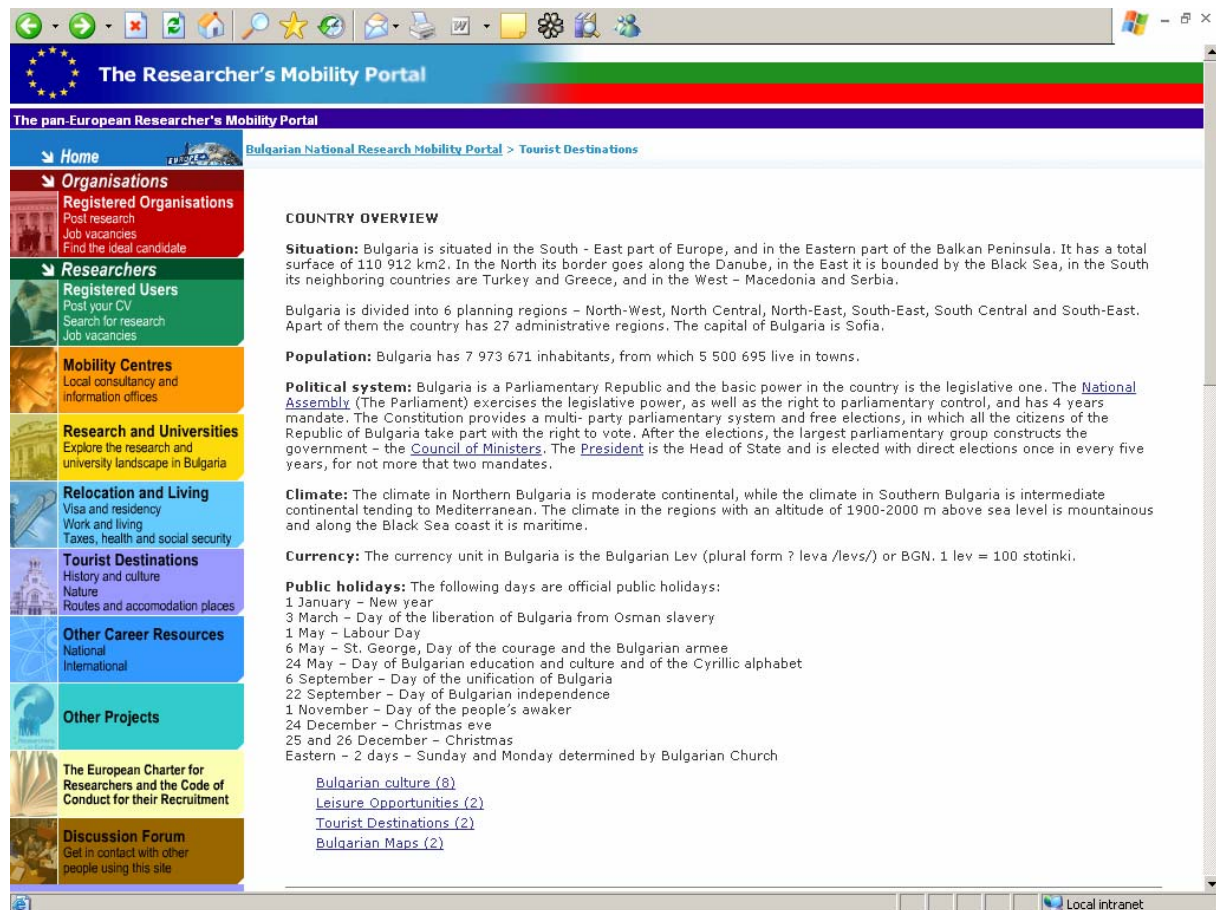


Figure 13 – National RMP presentation –Tourist Destinations

Let look closely the Tourist Destinations, for example. There are 8 records for Bulgarian culture, two for Leisure Opportunities and so on. The user on the National RMP sees these records as it is shown on figure 13. The DB for Bulgarian culture records are visible on figure 14. The main view of the DB is on Bulgarian, but in the records the information exists on both languages – Bulgarian and English.

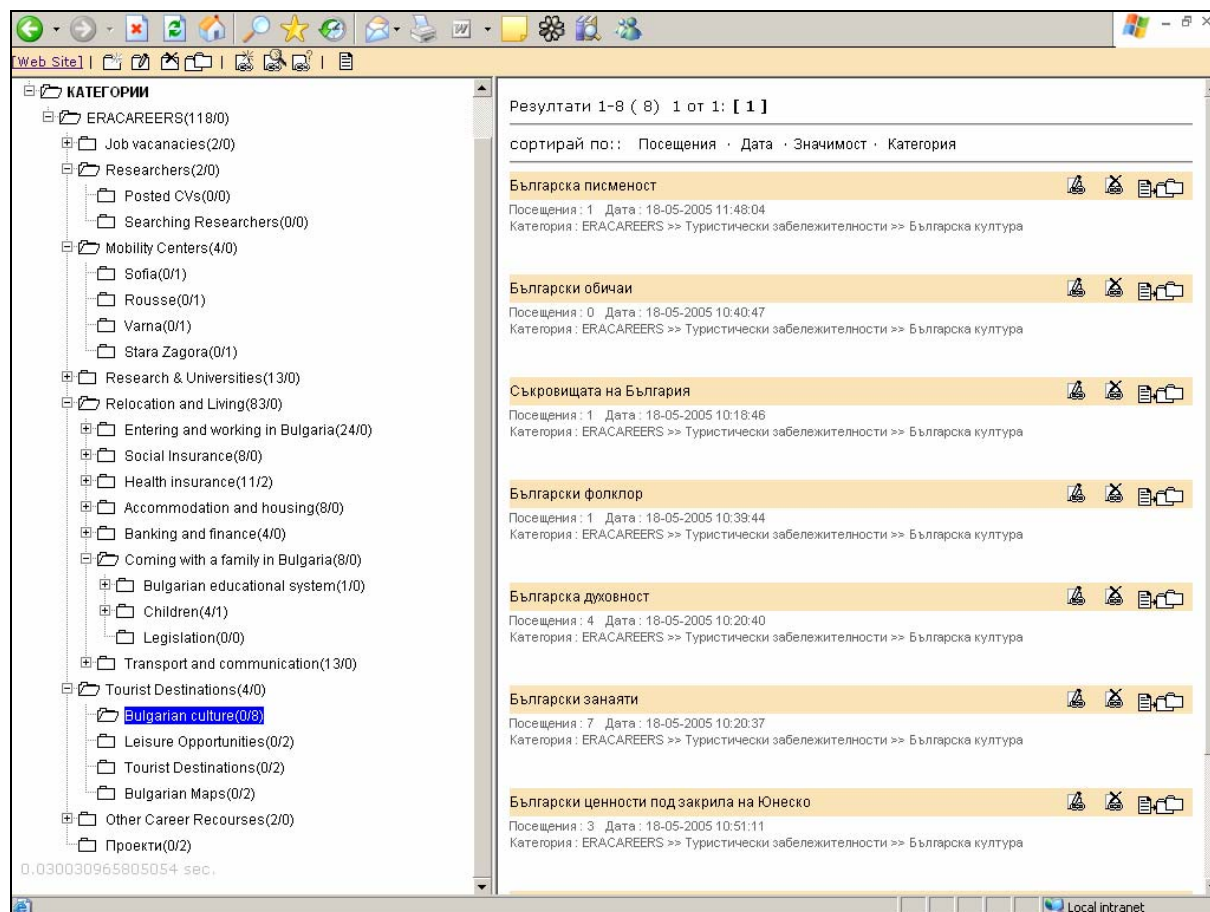


Figure 14 – National RMP presentation – DB of Tourist Destinations

Conclusion

The final version of the National RMP is working on <http://www.eracareers-bg.net> in English and Bulgarian. The portal will be enriched and improved with more information and oriented to the end users. The National RMP design is a mirror of the European one.

It has a key role for the effective cooperation and coordination of the Research Mobility Centers in Bulgaria and supports other Projects related to the Researcher mobility, e.g. REKS – “Researchers in European Knowledge Society”, funded from the EU 2005 “Researchers in Europe” Initiative.

The National RMP is organized to support the Job Vacancies - posted via RJOE - also an effective link to the European Researchers’ Mobility Portal.